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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/476,521	01/03/2000	Herbert Gropp	RUM212	7964

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Horst M. Kasper
13 Forest Drive
Warren, NJ 07059

[REDACTED] EXAMINER

LUONG, VINH

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 09/22/2003

32

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/476,521	Applicant(s) GROPP et al.
	Examiner Luong	Art Unit 3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 6/25/03

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above, claim(s) 8 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-7 and 9-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 1/3/00 is/are a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on 2/11/03 is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. 09/016,597.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Vinh T. Luong
Vinh T. Luong
Primary Examiner

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) Other: *Exhibit*

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1. The Amendment filed on February 11, 2003 (Paper No. 25½), May 27, 2003 (Paper No. 29), and June 25, 2003 (Paper No. 31) have been entered.
2. Claim 8 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicants timely traversed the restriction (election) requirement in Paper No. 10.
3. The information disclosure statements filed on February 19 and 24, 2003 have been considered.
4. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on February 11, 2003 have been disapproved because applicants introduce new matter. For example:
 - (a) new Figs. 4 and 4a introduce new matter, such as, the new element 6 as now shown. The original claim 1 discloses that the element 6 is an end piece. However, Figs. 4 and 4a show that the element 6 is not at the end of the camshaft in order to be the end piece. The original disclosure does not convey the concept that the end piece 6 is not located at the ends of the camshaft as now shown, thus, under the original disclosure, it is new matter. *In re Anderson*, 176 USPQ 331 (CCPA 1973); and
 - (b) new Fig. 3 introduces new matter, such as, the deletion of a ring (unnumbered, see Exhibit attached). The original Fig. 3 shows the ring located adjacent to the cam 3, however, new Fig. 3 now does not show such ring. See *Twin Disc v. United States*, 231 USPQ 417, 435 (US Cls. Ct. 1986)(new matter by deletion).
5. The original drawings are objected to because:

(a) the drawings should show the plane upon which a sectional view such as Fig. 1 is taken; and

(b) each part of the invention, such as, the *third* compression joint and/or the *third* crystalline phosphate coating in claims 9 and 10, and the solid rod in claims 15 and 17 should be designated by a referential numeral or character.

Correction is required.

6. The original drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed features, such as, (a) the bearing ring and the *third* crystalline phosphate coating in claim 9; and (b) the solid rod in claims 15 and 17 must be shown or the features canceled from the claims. No new matter should be entered.

The original drawings merely show: (a) the pipe 1 as described on page 6 of the specification; and (b) only two coatings (*i.e.*, first and second coatings) 2 and 5 as described in the original specification.

7. The *specification* is objected to as failing to provide proper antecedent basis for the claimed subject matter, such as, "a *second* compression joint," "a *second* crystalline phosphate coating," "a *third* compression joint" and "a *third* crystalline phosphate coating" in claims 9 and 10, *etc.* See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 9-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in

the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

New matter

Claims 9 and 10 now call for the *third* compression joint, and the *third* crystalline phosphate coating. However, the original drawings (Figs. 1-3) show only two coatings 2 and 5 as described in the original specification. Claims 9 and 10 now claim three coatings as evidenced by the term “a *third* crystalline phosphate coating.” The third crystalline phosphate coating is unsupported by the record as filed.

New claim 18 calls for, *inter alia*, “a tube length of from about 100 mm to 1500 mm, an outer diameter of from about 10 mm to 100 mm, and a wall thickness from about 0.5 mm to 10 mm, and is furnished with a fine crystalline compound stable phosphate layer and wherein the thickness of the fine crystalline compound stable phosphate layer amounts to from about three micrometers to 10 micrometers.” Nevertheless, a review of the original disclosure filed on January 3, 2000 reveals that on the filing date applicant did not disclose the above claimed sizes or dimensions. For example, page 4 of the original specification only describes the fine positioning to + 0.1 mm longitudinally, +/- 10 angular minutes based on the coating, and a torsional resistance of 10 - 20 Nm. There is no description about the dimension of the tube length, the outer diameter, the wall thickness, and the thickness of the *fine* crystalline compound stable phosphate layer from about 3 - 10 micrometers as now claimed. Therefore, the above sizes or dimensions introduce new matter.

Inadequate description

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Claims 9 and 10 now call for the *third* compression joint, and the *third* crystalline phosphate coating. The original drawings (Figs. 1-3) show only two coatings 2 and 5 as described in the original specification. On the filing date, it is unclear as to how applicant makes/uses the third crystalline phosphate coating as claimed.

Claims 15 and 17 call for a solid rod. However, applicants' drawings show only a pipe (*i.e.*, a hollow rod) as described on page 6 of the specification. It is unclear as to how applicant makes/uses the camshaft that has an elongated part being a solid rod as claimed.

Claims 16 and 17 call for "a *suitable* surface coating." It is unclear what type of surface coating is the claimed suitable surface coating and how applicant makes/uses the claimed suitable surface coating.

10. Claims 1-7 and 9-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "*bare* compression joints" in claim 1 is vague and indefinite since it is not clear what types of compression joints are the bare compression joints.

It is unclear:

(a) which structures define the claimed elements, such as, the *third* compression joint, and the *third* crystalline phosphate coating in claims 9 and/or 10. The original drawings (Figs. 1-3) show only two coatings 2 and 5 as described in the original specification, however, claims 9 and/or 10 now claim three coatings as evidenced by the term "a *third* crystalline phosphate coating" in claim

9, or “a third longitudinal compression joint” in claim 10. Applicants are respectfully urged to identify each claimed element with reference to the drawings;

(b) whether the term that appears at least twice, e.g., “compression joints” in claims 6 and 7 refers to the same or different things. See MPEP 2173.05(o). Applicants are respectfully urged to identify each claimed element with reference to the drawings; and

(c) what type of surface coating is the “*suitable* surface coating” in claims 16 and 17.

The use of alternative expression “or” in, e.g., claim 12 renders said claims vague and indefinite.

No antecedent basis is seen for the term, e.g., “the pipe” in claim 17 and “the cams” (plural, emphasis) in claim 18.

The terms, such as, “*about*” and “*fine*” in claim 18 are relative terms which render the claims indefinite. These terms are not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear, e.g., what dimensions are considered to be “about 100 mm,” and what range or dimension of the crystalline is required in order to be the so-called ”*fine* crystalline.”

11. Claims 1-7 and 9-17, as best understood, are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Seim *et al.* (Publication “*Erhöhung der Sicherheit gebauter Nockenwellen durch Einsatz beschichteter Preßverbindungen*” cited in EPO Search Report in the parent application).

Regarding claim 1, Seim teaches a built-up camshaft comprising a pipe coated by a jointing coating on an outer cylindrical surface and an inner cylindrical surface (*id.*, the Table on page 289 and Fig. 12 on page 290) and having an outer pipe diameter and an inner pipe diameter and having cam places, bearing ring places and pipe end places (*e.g.*, Figs. 1, 2 and 5); cams formed as rings with outer and inner cylindrical flanges (Fig. 12) and provided with the jointing coating on an inner cylindrical surface of the inner cylindrical flange and positioned at the cam places and bearing rings provided with the jointing coating on inner surfaces being in contact with the pipe and positioned at the bearing ring places and end pieces provided with the jointing coating on outer cylindrical surfaces and inherently having an outer end pieces diameter bigger than the inner pipe diameter, wherein the jointing coating of the pipe and the jointing coating of the cams, the bearing rings and the end pieces create durable joints between the pipe and the cams, the bearing rings and the end pieces and wherein the surface coating inherently prevents a tribocorrosion and increases load capacity as compared to bare compression joints.

Note that the outer end pieces of Seim inherently have an outer diameter bigger than the inner pipe diameter so that Seim's outer end pieces can be slipped into the pipe and joined to the pipe.

Claim 1 and other claims below are anticipated by Seim since Seim's camshaft inherently has the bearing rings and end pieces. In fact, the bearing rings and end pieces are notoriously conventional in the camshaft art (see, *e.g.*, US Patent No. 5,299,881 issued to Mettler-Friedli and references classified, *e.g.*, in Class 74, subclass 567, and Class 123, subclass 90.6 of the Office). Without the bearing rings and end pieces, one would not be able to assemble or mount Seim's camshaft to other parts of the internal combustion engine, *i.e.*, it would be inoperative for its intended

purposes. See *In re Berg*, 46 USPQ2d 1226 (CAFC 1998). In addition, it is well settled that the “wherein” or “whereby” clause that merely states the inherent results of the limitations in the claim adds nothing to the claim’s patentability or substance. *Texas Instruments Inc. v. International Trade Commission*, 26 USPQ2d 1018 (CAFC 1993).

Regarding claim 2, the joint coating of Seim is a joint-stable conversion coating (Fig. 12 and the English summary on page 285).

Regarding claim 3, the inorganic and compound joint coatings of Seim inherently include a cement coating.

Regarding claim 4, at least one of the pipe, cams, end pieces and bearing rings are made of metal as seen by the drawing symbols for draftsmen in Figs. 10 and 12.

Regarding claim 5, the outer and inner cylindrical surfaces of the pipe are inherently partially mechanically machined. See, e.g., Fig. 10.

Regarding claims 6 and 7, Seim teaches a built-up camshaft comprising a pipe coated with a crystalline phosphate coating or a cement on an outer cylindrical surface and having outer and inner pipe diameters; cams and bearing rings (Figs. 9 and 12, and the Table on page 289) having an inner diameter and end pieces having an outer diameter connected by means of compression joints. The cams, bearing rings and end pieces of Seim inherently have an outer diameter bigger than the inner pipe diameter so that they can be slipped into the pipe and joined to the pipe.

Regarding claim 9, Seim teaches a built-up camshaft comprising:

a pipe coated with a crystalline phosphate coating on an outer cylindrical surface and having an outer pipe diameter (Figs. 10 and 12);

a cam (Figs. 1 and 12) having an inner diameter larger than the outer pipe diameter and connected by means of a compression joint to the pipe and provided with the crystalline phosphate coating on surfaces being in contact with the pipe, wherein the crystalline phosphate coating prevents a tribocorrosion and increases load capacity as compared to compression joints and creates a stable joint between the pipe and the cam;

a bearing ring having an inner diameter larger than the outer pipe diameter and connected by means of a second compression joint to the pipe and provided with a second crystalline phosphate coating on surfaces being in contact with the pipe, wherein the crystalline phosphate coating prevents a tribocorrosion and increases load capacity as compared to compression joints without coating and creates a stable joint between the pipe and the bearing ring;

an end piece having an inner diameter larger than the inner pipe diameter and connected by means of a third compression joint to the pipe and provided with a third crystalline phosphate coating on surfaces being in contact with the pipe, wherein the crystalline phosphate coating prevents a tribocorrosion and increases load capacity as compared to compression joints without coating and creates a stable joint between the pipe and the end piece.

Note that Seim's camshaft inherently has the bearing rings and end pieces. Without the bearing rings and end pieces, one would not be able to mount Seim's camshaft to other parts of the internal combustion engine.

Regarding claim 10, Seim teaches a built-up camshaft comprising:

an elongated part (Figs. 1 and 12) having an outer cylindrical surface;

a cam (Figs. 1 and 12) connected by means of a longitudinal compression joint to the elongated part, wherein the cam is covered with a joint-stable surface coating (Fig. 12), and wherein the surface coating prevents a tribocorrosion and increases the load capacity as compared to compression joints;

a bearing ring connected by means of a second longitudinal compression joint to the elongated part, wherein the cam is covered with a second joint-stable surface coating, and wherein the surface coating prevents a tribocorrosion and increases the load capacity as compared to compression joints;

an end piece connected by means of a third longitudinal compression joint to the elongated part, wherein the cam is covered with a third joint-stable surface coating, and wherein the surface coating prevents a tribocorrosion and increases the load capacity as compared to compression joints.

Note that Seim's camshaft inherently has the bearing rings and end pieces. Without the bearing rings and end pieces, one would not be able to mount Seim's camshaft to other parts of the internal combustion engine.

Regarding claim 11, see regarding claim 3 above.

Regarding claim 12, see regarding claim 4 above. Further, note that the patentability of product-by-process claim is not dependent upon the process (cutting or non-cutting, milling or forging in massive or profiled form). *In re Thorpe*, 227 USPQ 964, 966 (CAFC 1985) and MPEP 2113.

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Regarding claim 13, the outer jacket face of the pipe (Figs. 1 and 12) inherently has a drawn quality. See also MPEP 2113 *supra*.

Regarding claim 14, the elongated part having an outer cylindrical surface is a pipe (Fig. 1).

Regarding claim 15, the elongated part having an outer cylindrical surface is a solid rod (Fig. 6).

Regarding claims 16 and 17, Seim teaches a built-up camshaft comprising a pipe or a solid rod, cams, bearing rings, end pieces, and other parts (Fig. 5), wherein the cams, the end pieces, the bearing rings, and the other parts are connected by means of longitudinal compression joints to the pipe or to the solid rod, wherein the parts to be connected are provided with a suitable surface coating, and wherein the surface coating inherently prevents a tribocorrosion and increases the load capacity as compared to non-coated compression joints. *Texas Instruments Inc. v. International Trade Commission, supra*.

35 USC 103(a)

Regarding claims 1-7 and 9-17, Seim teaches the invention substantially as claimed. See the rejection under 35 USC 102(a) above. However, Seim does not explicitly teach the dimensions of the cams, bearings, end pieces and pipe, *etc.* as claimed.

It is common knowledge in the art to change the dimensions of the cams, bearings, end pieces and pipe, *etc.* of Seim such that, *e.g.*, the end pieces of Seim have an outer diameter bigger than the inner pipe diameter, *etc.* in order to slide the end pieces into the pipe and join the end pieces to the pipe. See *stare decisis* about the change in size/proportion cited in MPEP 2144.04.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the dimensions of the cams, bearings, end pieces and pipe, etc. of Seim such that, e.g., the end pieces of Seim have an outer diameter bigger than the inner pipe diameter, etc. in order to slide the end pieces into the pipe and join the end pieces to the pipe as suggested by common knowledge in the art.

12. Claims 18-20, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Seim.

Regarding claims 18-20, Seim teaches the invention substantially as claimed. See the rejection under 35 USC 102(a) above. In addition, note that the patentability of product-by-process claim is not dependent upon the process, such as, “pressed” in the “wherein” clause of claim 18. *In re Thorpe* and MPEP *supra*. However, Seim does not explicitly teach the dimensions of the tube length, the outer diameter, the wall thickness, and the thickness of the *fine* crystalline compound stable phosphate layer as claimed.

It is common knowledge in the art to change the dimensions of the tube length, the outer diameter, the wall thickness, and the thickness of the *fine* crystalline compound stable phosphate layer of Seim in order to improve the durability of Seim’s camshaft. See *stare decisis* about the change in size/proportion cited in MPEP 2144.04.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the dimensions of the tube length, the outer diameter, the wall thickness, and the thickness of the *fine* crystalline compound stable phosphate layer of Seim as claimed in order to improve the durability of Seim’s camshaft as suggested by common knowledge in the art.

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13. Claims 1-7 and 9-20, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Seim in view of Mettler-Friedli (US Patent No. 5,299,881).

Regarding claims 1-7 and 9-17, Seim teaches the invention substantially as claimed. However, Seim does not explicitly teach the bearing rings and the end pieces. See page 23 of Paper No. 15.

Mettler-Friedli teaches the conventional bearing rings and the end pieces 2, 2a, 12, 13 in order to mount the camshaft to an internal combustion engine as seen in line 19 *et seq.*, column 5.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the conventional bearing rings and the end pieces on Seim's camshaft in order to mount Seim's camshaft to the internal combustion engine as suggested by Mettler-Friedli.

Regarding claims 18-20, Seim teaches the invention substantially as claimed. However, Seim does not explicitly teach: (a) the bearing rings and the end pieces; and (b) the dimensions of the tube length, the outer diameter, the wall thickness, and the thickness of the *fine* crystalline compound stable phosphate layer as claimed.

Mettler-Friedli teaches the conventional bearing rings and the end pieces 2, 2a, 12, 13 in order to mount the camshaft to an internal combustion engine as seen in line 19 *et seq.*, column 5.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the conventional bearing rings and the end pieces on Seim's camshaft in order to mount Seim's camshaft to the internal combustion engine as suggested by Mettler-Friedli. The sizes or dimensions of the tube length, the outer diameter, the wall thickness, and the thickness of the *fine* crystalline compound stable phosphate layer of Seim camshaft as modified by Mettler-Friedli would

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have been a matter of choice in design within common knowledge in the art. See *stare decisis* about the change in size/proportion cited in MPEP 2144.04.

14. Applicants' arguments filed February 11, 2003 (Paper No. 25½), May 27, 2003 (Paper No. 29), and June 25, 2003 (Paper No. 31) have been fully considered but they are not persuasive.

The examiner addresses applicants' arguments in the same numerical order that applicants used in Paper No. 29.

1. With respect to the Amendment filed on February 11, 2003, since it was crossed in the mail as explained above, therefore, the Office action on February 21, 2003 did not consider it.

2a. With respect to the finality of the Office action on February 21, 2003, its finality has been withdrawn as seen in the instant Office action.

1. With respect to the request of a CPA filed on November 13, 2002, it has been granted in the Office action on February 21, 2003.

2. The Amendment with the certificate of mailing dated February 4, 2003 was received by the Office on February 11, 2003 and has been entered.

3. Applicants' listing of pending claims has been acknowledged.

4. The withdrawal of method claim 8 is maintained as seen in previous Office action.

5-7. The information disclosure statements filed on February 5 and 12, 2003 have been considered.

8, 10, and 11. Two sheets of Drawings (Figs. 1-4) filed on February 4, 2003 was received by the Office on February 11, 2003. These drawings have been disapproved due to new matter as seen above.

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9. Applicants understand that new Figs. 9-18 will not be part of any patent issuing in the present case. Applicants are respectfully suggested to affirmatively cancel new Figs. 9-18.

12. The examiner acknowledges the fact that the present amendment reverses the previous insertions.

13. Applicants responded in the amendment filed on February 4, 2003 that “as the language employed furnishes labels for the elements of the invention, applicants do not yet realize what language would be acceptable to the Examiner.”

The examiner respectfully suggests that applicants should use the same terminology in the claims and specification and to indicate each claimed element by a referential numeral or character. See MPEP 608.01(o).

15. Applicants submit that the third crystalline coating is associated with reference numeral 5. However, applicants’ submission is unsupported by the record as filed. For example, page 6 of the original specification and original claims 2 and 3 describes an outer coating 2 and an inner coating 5. Therefore, the coating 5 is the second coating, not the third coating since the coating 2 is the first coating. Applicants further propose corrected Figs. 1a, 2a, and 4a. However, these new figures introduce new matter as seen above. Applicants are respectfully reminded that “if the best mode contemplated by the inventor at the time of filing the application is not disclosed, such defects cannot be cured by submitting an amendment seeking to put into the specification something required to be there when the application was originally filed.” *In re Hay*, 189 USPQ 790 (CCPA 1976) and MPEP 608.01(h).

16. With respect to 35 USC 112, second paragraph, the amended claims 1, 9, and 16

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as seen in the amendment filed on February 4, 2003 are still indefinite for the reasons set forth above.

17. With respect to the art rejection, applicants are working on a declaration intended to show the claims under consideration are new and unobvious. Since the declaration has not been filed, the examiner cannot comment about it.

Finally, regarding Paper No. 31, applicants believe that new claims 18-20 define the invention in a patentable way. Nevertheless, on the one hand, new claims 18-20 are unsupported by the original disclosure, on the other hand, new claims 18-20 are unpatentable under 35 USC 103 as being obvious over Seim or Seim in view of Mettler-Friedli as seen above.

For the reasons set forth above, the case is not in the condition for allowance.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Luong whose telephone number is (703) 308-3221. The examiner can normally be reached on Monday-Thursday from 8:30 AM EST to 7:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci, can be reached on (703) 308-3668. The fax phone number for this Group is (703) 305-7687. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1113.

Luong

September 22, 2003


Vinh T. Luong
Primary Examiner

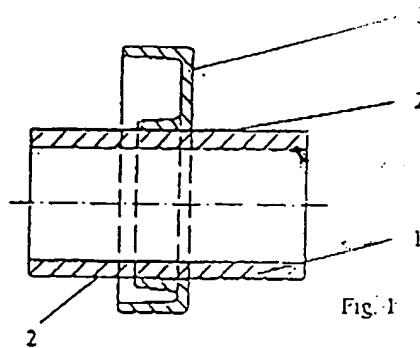


Fig. 1

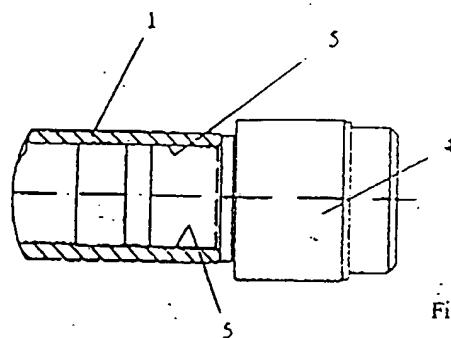


Fig. 2

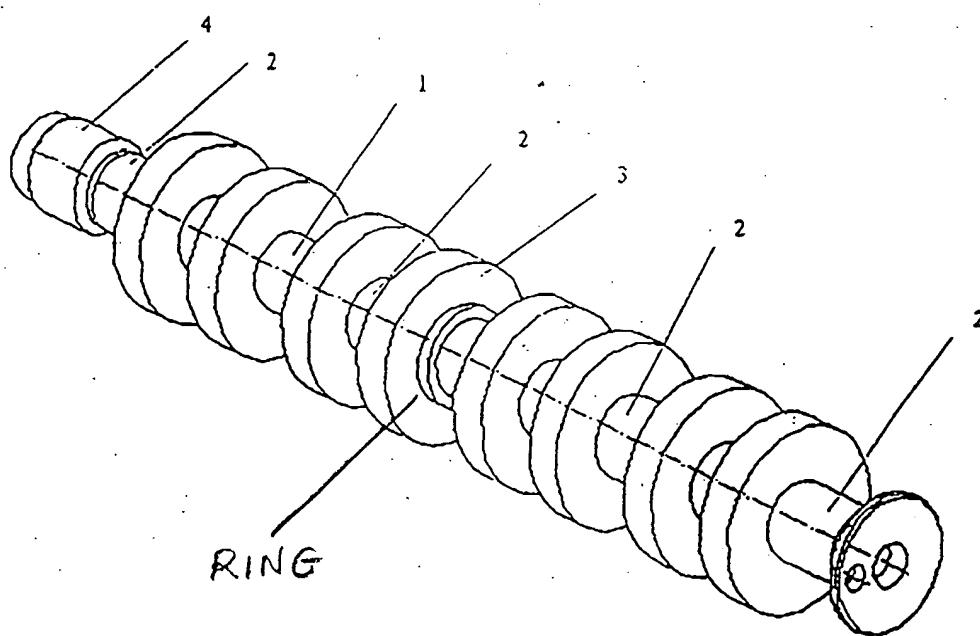


Fig. 3

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